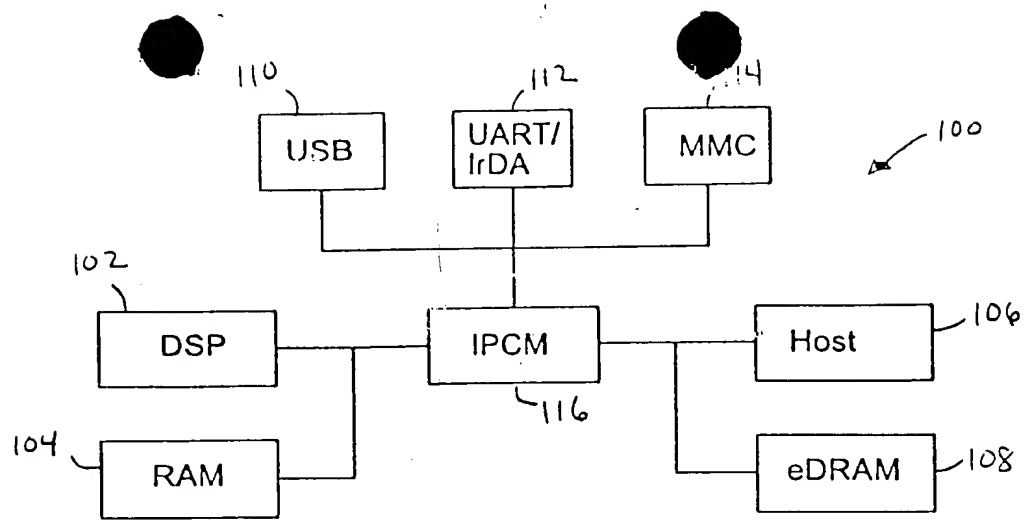
110
112
USB
UART/
IrDA
MMC
100
102
DSP
IPCM
Host
106
116
104
RAM
eDRAM
108

FIG. 1

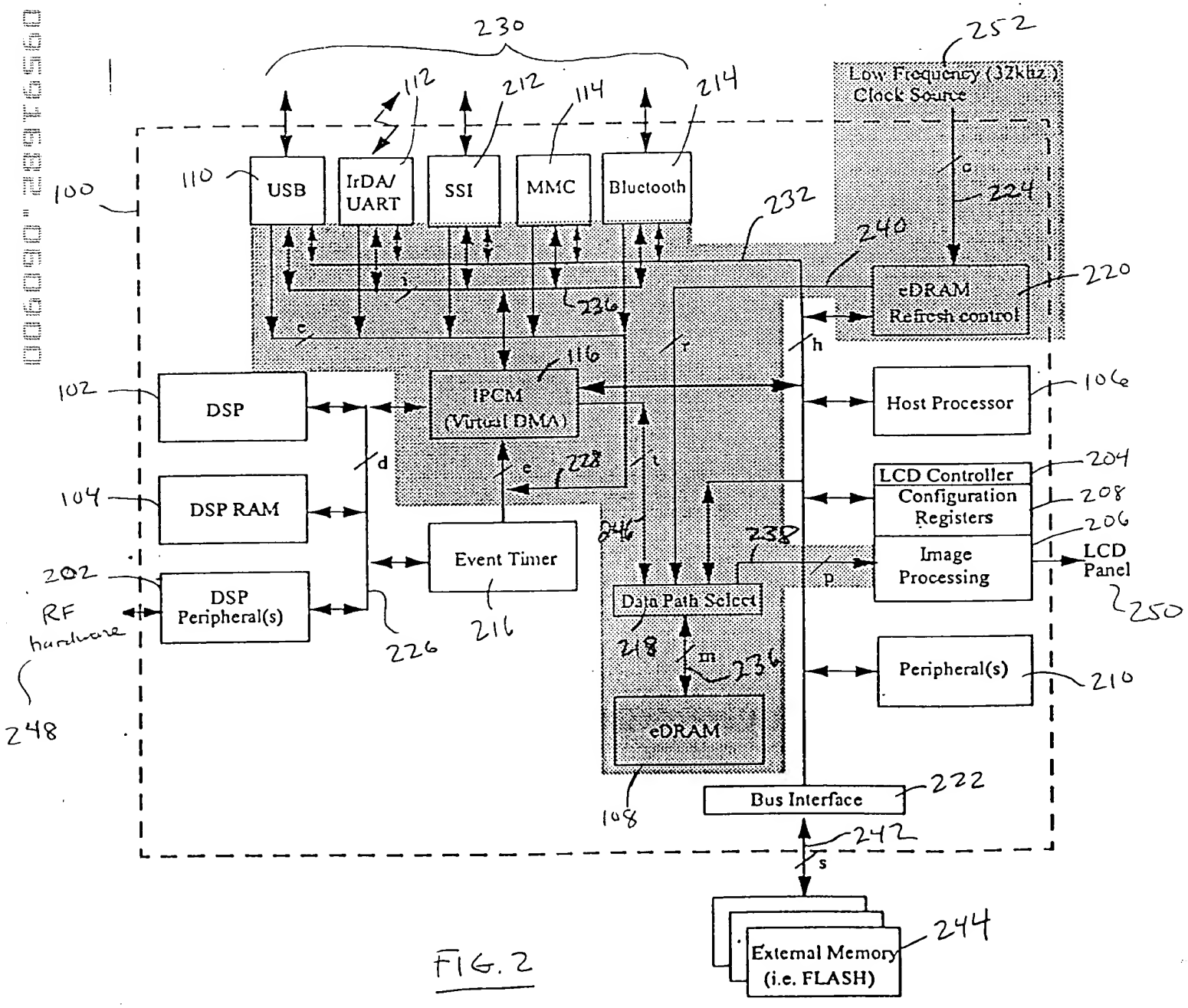
230
252
Low Frequency (32khz)
Clock Source
112
212
114
214
110
USB
IrDA/
UART
SSI
MMC
Bluetooth
100
232
240
224
220
eDRAM
Refresh control
236
116
102
DSP
IPCM
(Virtual DMA)
Host Processor
106
104
DSP RAM
228
LCD Controller
204
Configuration
Registers
208
206
Image
Processing
LCD
Panel
250
202
RF
hardware
DSP
Peripheral(s)
Event Timer
226
216
246
238
Data Path Select
218
236
Peripheral(s)
210
eDRAM
108
Bus Interface
222
242
248
External Memory
(i.e. FLASH)
244

FIG. 2

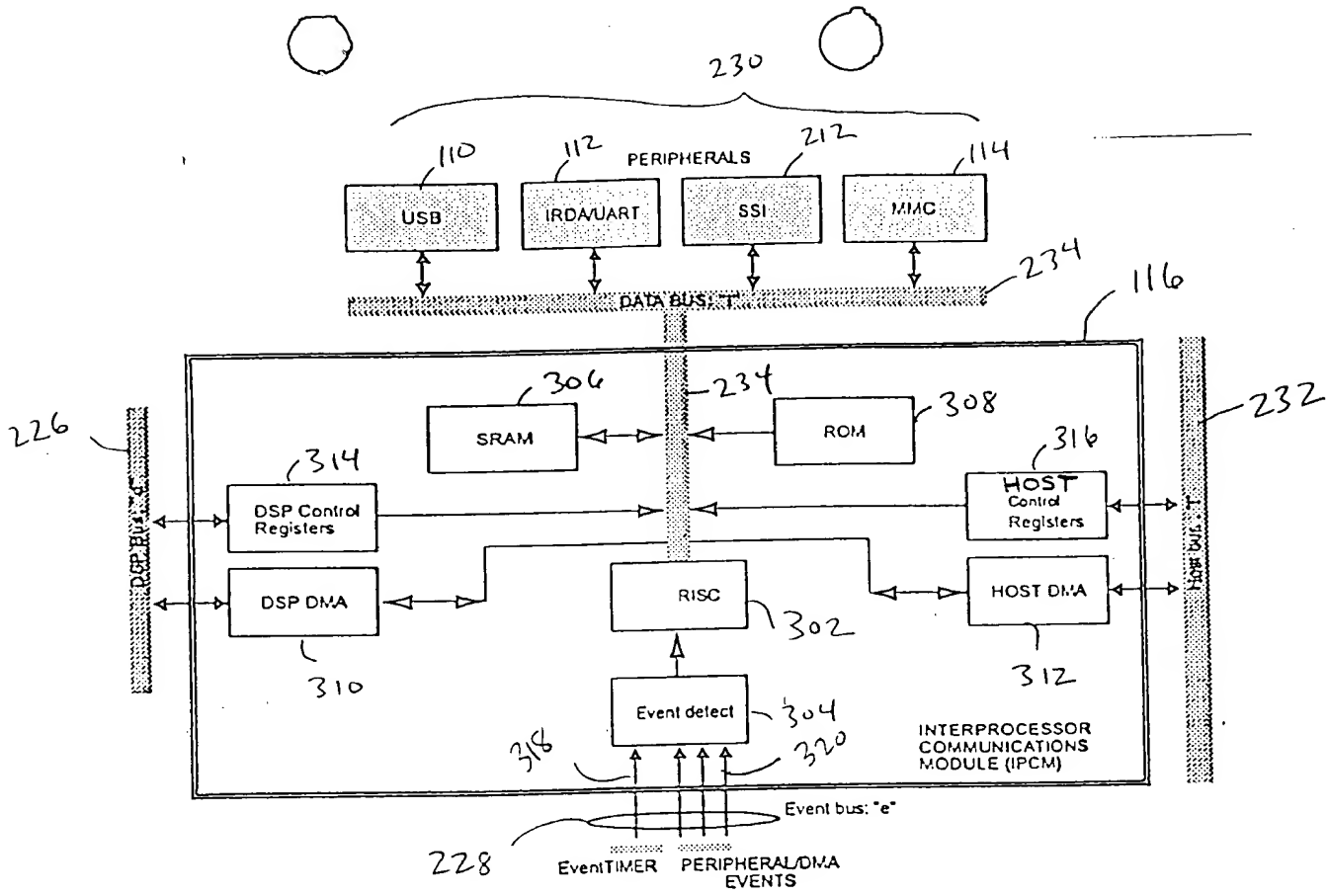
230
110
112
PERIPHERALS
212
114
USB
IRDA/UART
SSI
MMC
234
DATA BUS: "d"
116
306
234
SRAM
ROM
308
232
226
314
316
DSP Control Registers
HOST Control Registers
DSP Bus: "s"
DSP DMA
RISC
HOST DMA
HOST Bus: "h"
302
310
312
Event detect
304
318
320
INTERPROCESSOR COMMUNICATIONS MODULE (IPCM)
Event bus: "e"
228
EventTIMER
PERIPHERAL/DMA EVENTS

FIG. 3

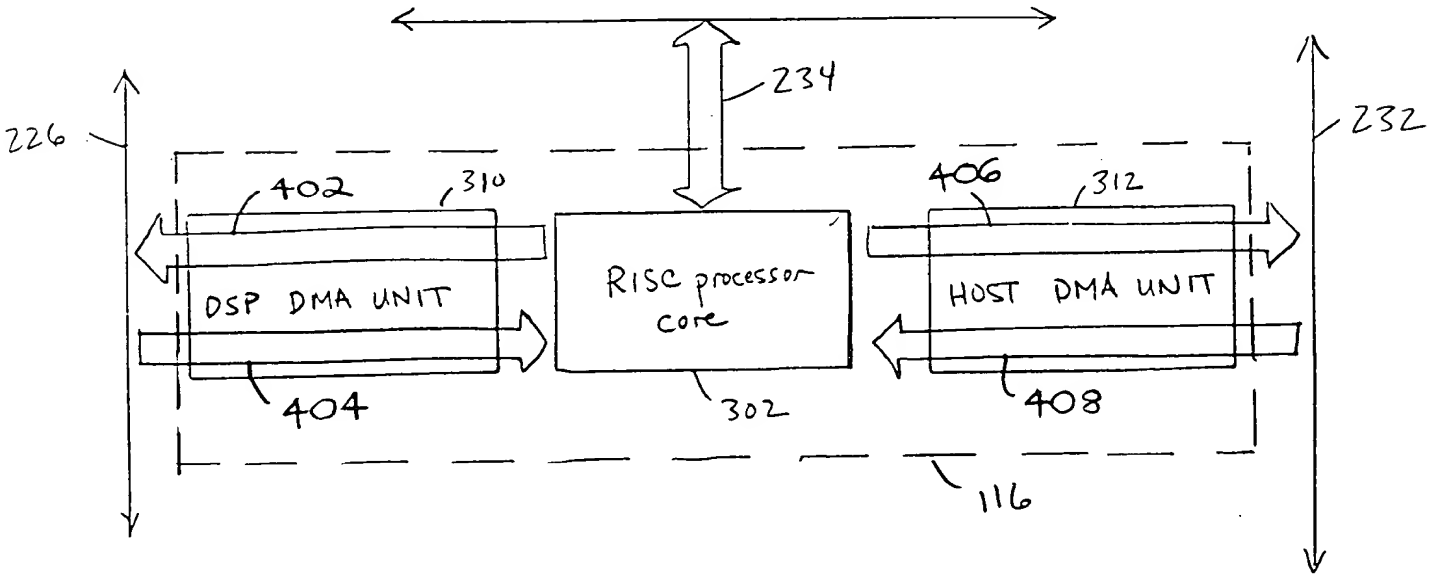
234
226
232
402
310
406
312
DSP DMA UNIT
RISC processor core
HOST DMA UNIT
404
302
408
116

FIG. 4

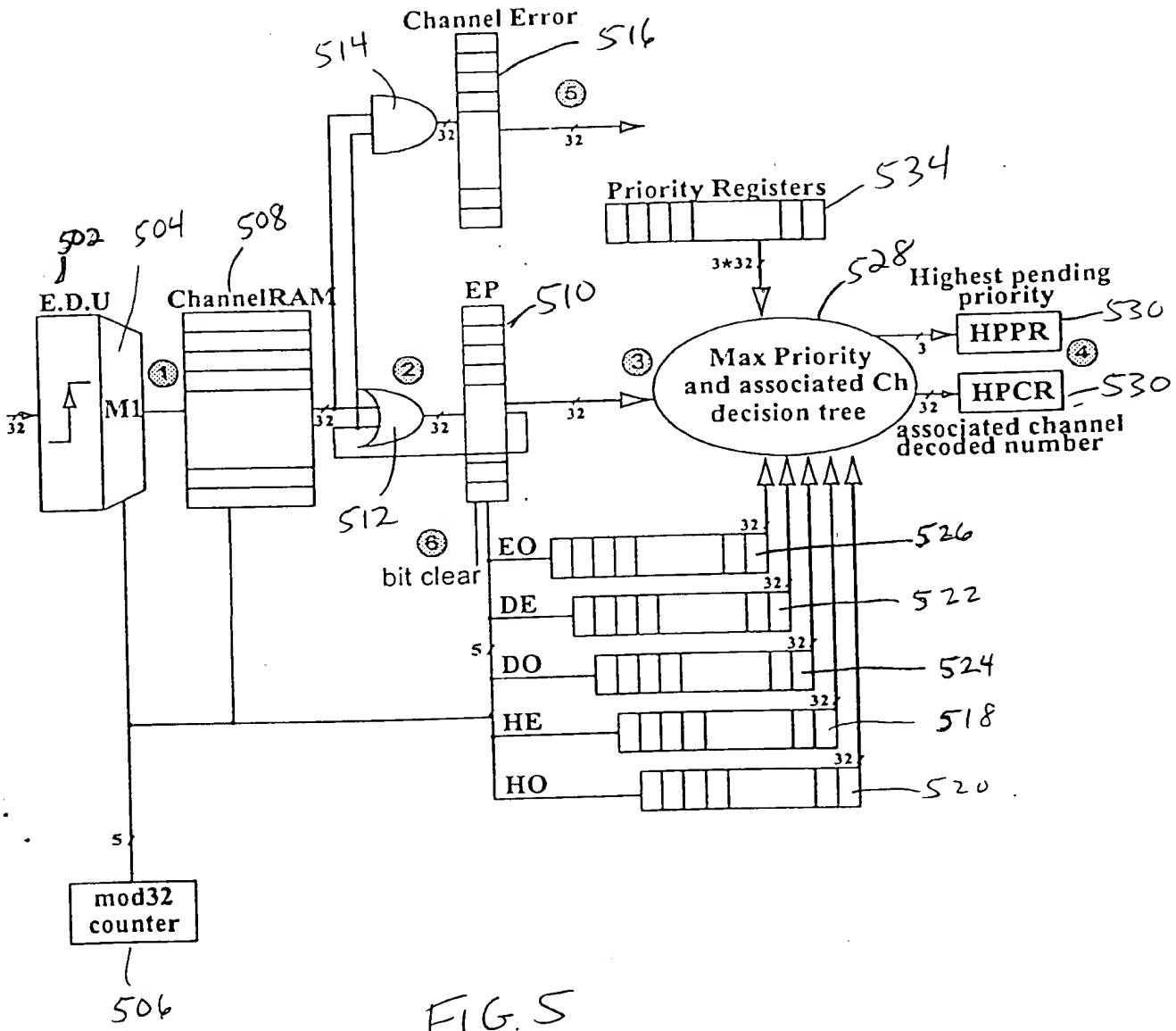
Channel Error
514
516
5
32
32
Priority Registers
534
3*32
528
Highest pending priority
502
504
508
E.D.U
ChannelRAM
EP
510
530
HPPR
3
4
3
Max Priority and associated Ch decision tree
HPCR
530
32
associated channel decoded number
M1
1
2
32
32
32
32
512
6
bit clear
EO
526
DE
522
5
DO
524
HE
518
HO
520
5
mod32 counter
506

FIG. 5

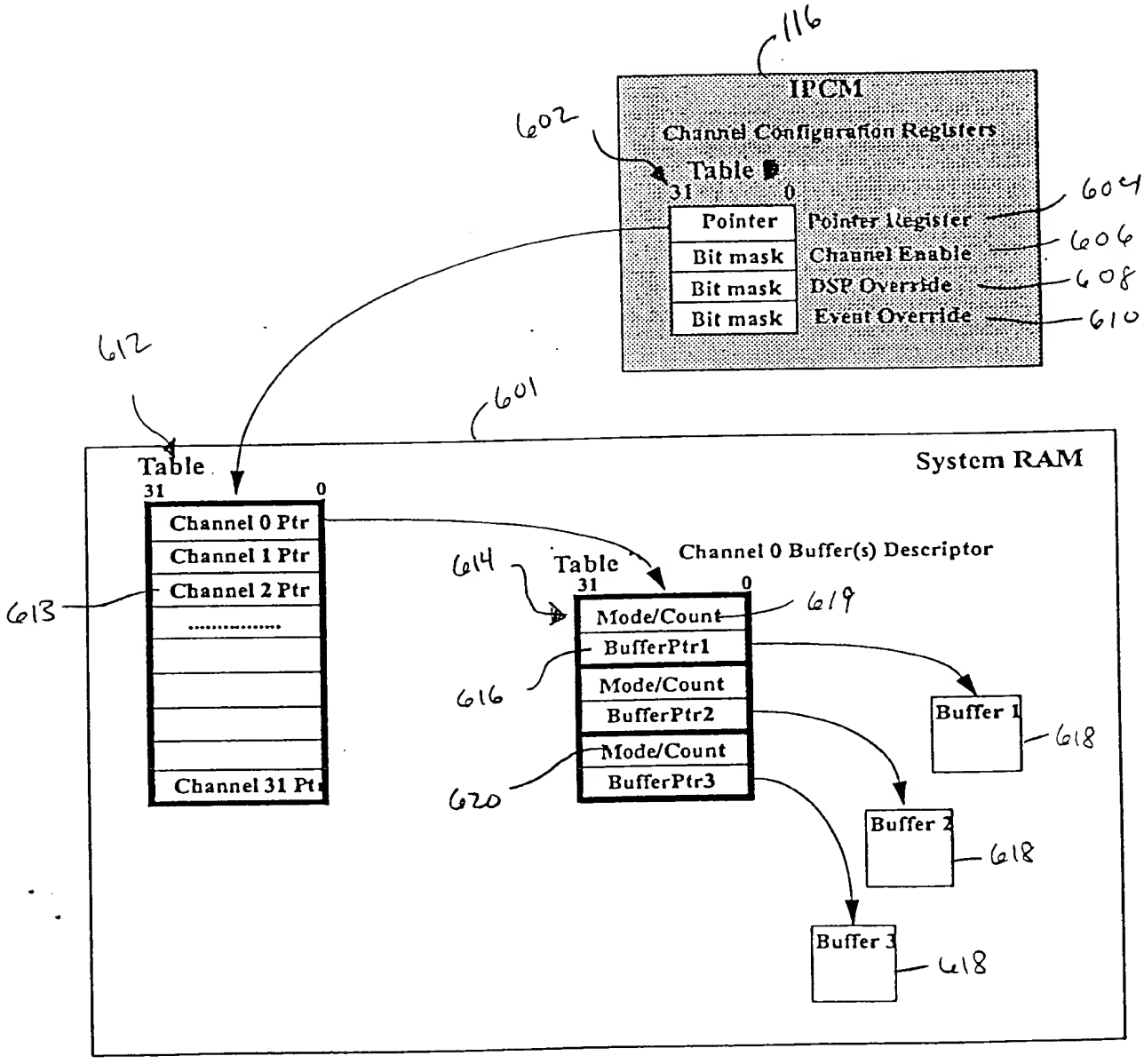
116
IPCM
Channel Configuration Registers
602
Table
31
0
Pointer
Pointer Register
604
Bit mask
Channel Enable
606
Bit mask
DSP Override
608
Bit mask
Event Override
610
612
601
System RAM
Table
31
0
Channel 0 Ptr
Channel 1 Ptr
Channel 2 Ptr
Channel 31 Pt
613
614
Table
Channel 0 Buffer(s) Descriptor
31
0
Mode/Count
619
BufferPtr1
616
Mode/Count
BufferPtr2
Mode/Count
620
BufferPtr3
Buffer 1
618
Buffer 2
618
Buffer 3
618

FIG. 6

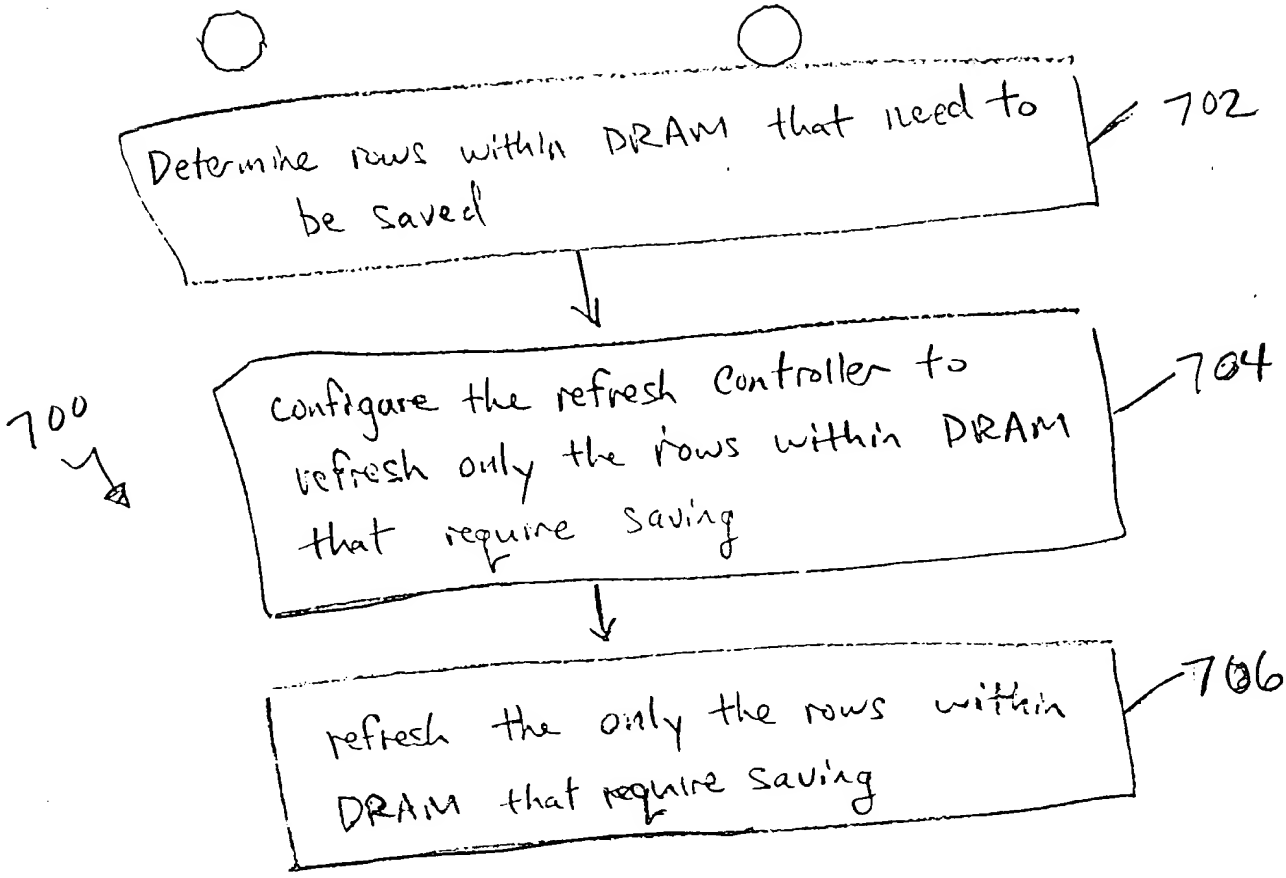

FIG. 7

0960-2816560

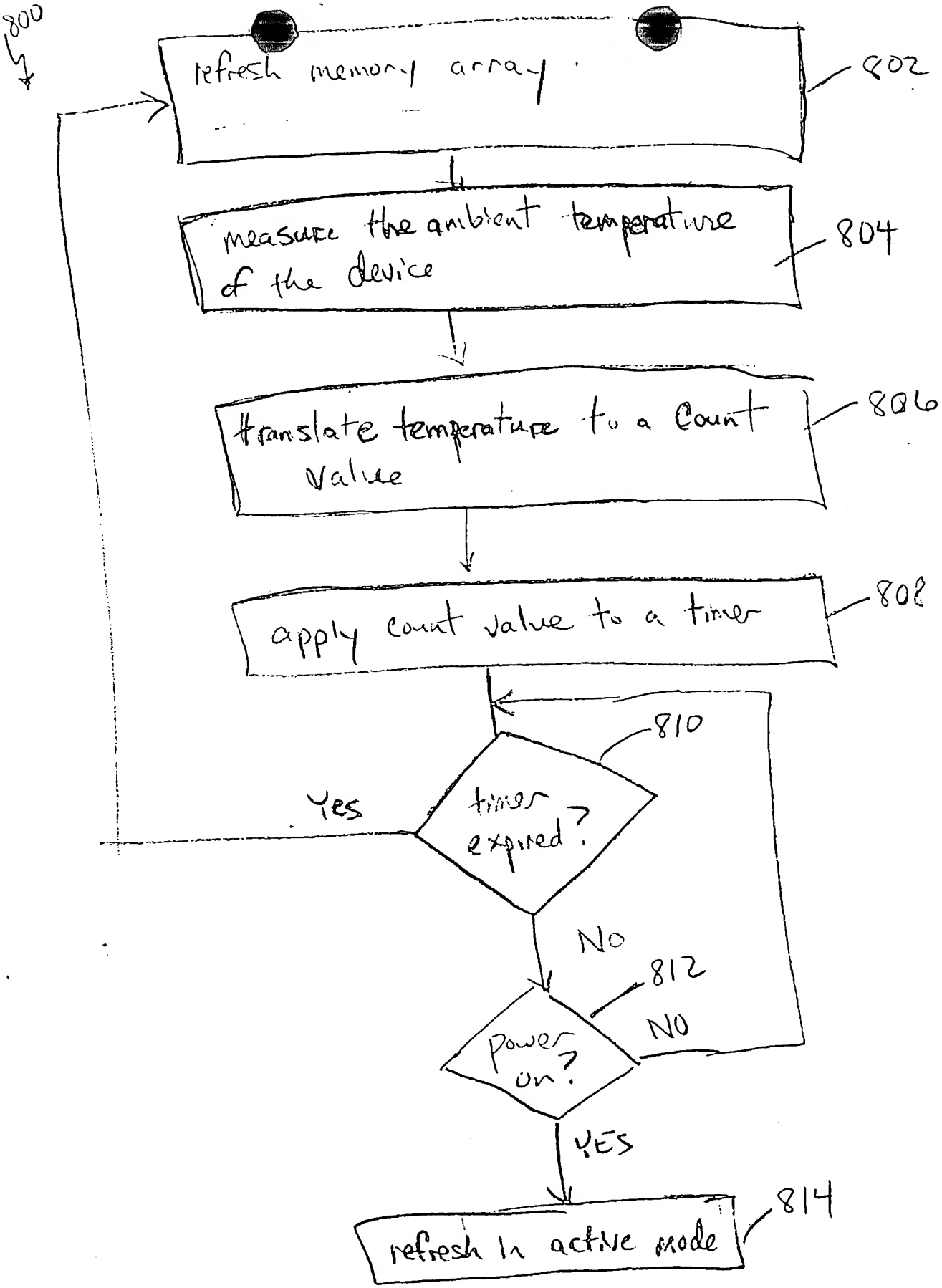
800
refresh memory array
802
measure the ambient temperature of the device
804
translate temperature to a count value
806
apply count value to a timer
808
timer expired?
810
Yes
No
power on?
812
NO
YES
refresh in active mode
814

FIG. 8

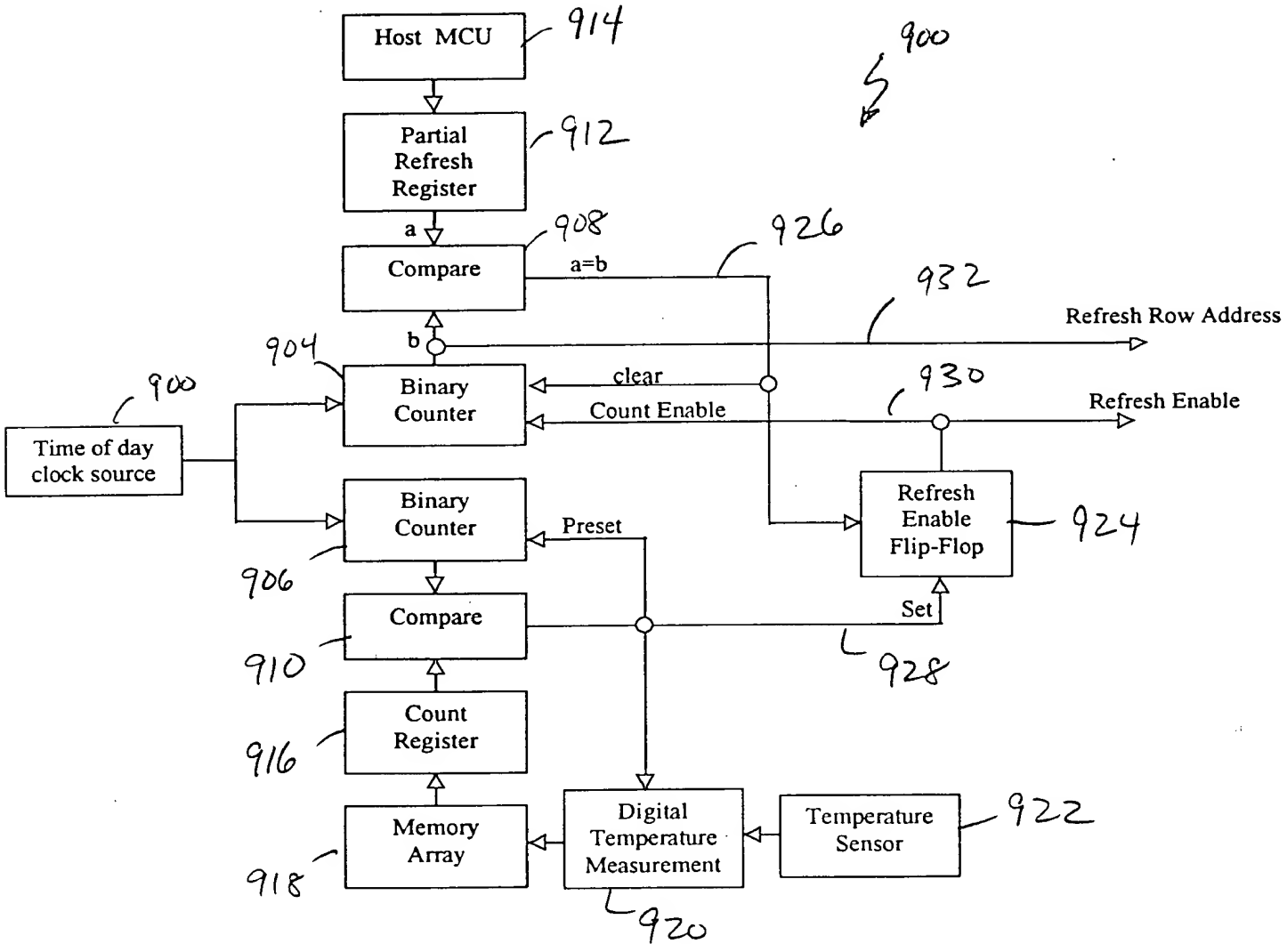
Host MCU
914
900
Partial Refresh Register
912
a
908
926
Compare
a=b
932
Refresh Row Address
b
904
Binary Counter
clear
930
Refresh Enable
Count Enable
900
Time of day clock source
Binary Counter
Preset
Refresh Enable Flip-Flop
924
906
Compare
Set
910
928
Count Register
916
Memory Array
Digital Temperature Measurement
Temperature Sensor
922
918
920

FIG. 9